Small Business Innovation Research/Small Business Tech Transfer

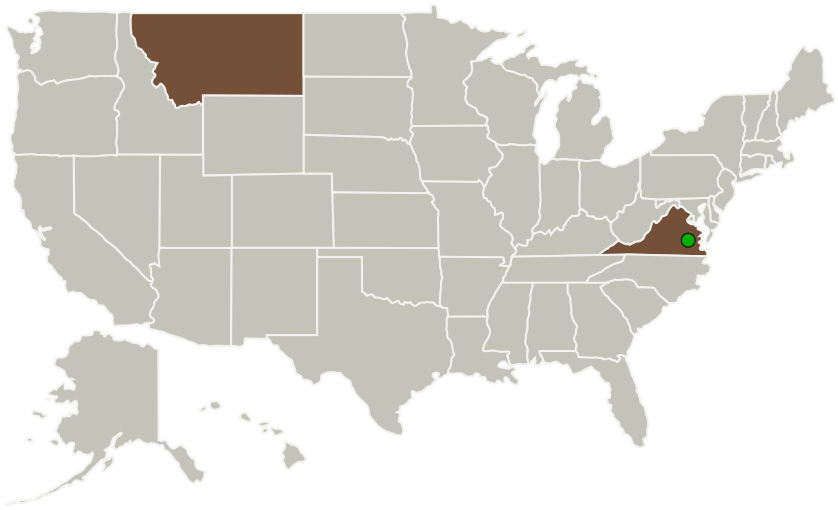
Iodine Stabilized Seed Laser for Space Applications, Phase II

Completed Technology Project (2014 - 2016)

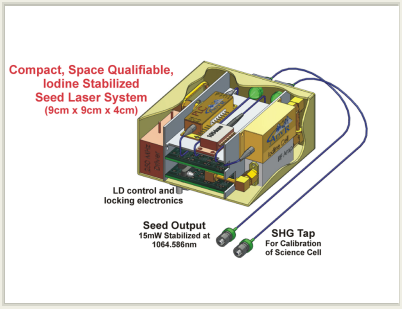
Project Introduction

The overall goal of this SBIR effort is development of a space qualifiable, compact, frequency stabilized seed laser with low SWaP for routine use in NASA LaRC's High Spectral Resolution Lidar (HSRL) flight-based and future space-based systems. In addition to refining process parameters to optimize performance, a major goal of the Phase II effort is risk mitigation through accelerated life testing and environmental component level testing to advance this highly efficient, waveguide-based Seed Laser System to TRL 6. Successful development of this technology, due to its compact, efficient, and reliable design, will enable further uses of the HSRL-based remote sensing system both in current flight-based systems and in future space-based systems.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
ADVR, Inc.	Lead Organization	Industry	Bozeman, Montana
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



Iodine Stabilized Seed Laser for Space Applications, Phase II Briefing Chart Image

Table of Contents

Iodine Stabilized Seed Laser for Space Applications, Phase II

Completed Technology Project (2014 - 2016)

Primary U.S. Work Locations	
Montana	Virginia

Project Transitions

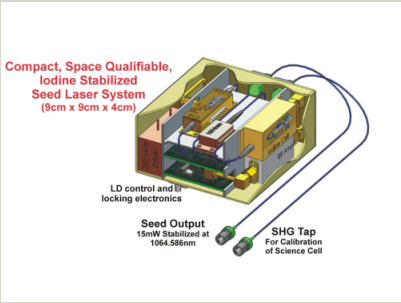
April 2014: Project Start

April 2016: Closed out

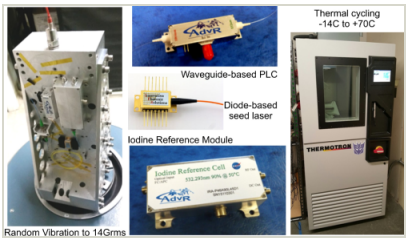
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137611)*

Images



Briefing Chart Image
Iodine Stabilized Seed Laser for Space Applications, Phase II Briefing Chart Image *(https://techport.nasa.gov/image/129427)*



Final Summary Chart Image
Iodine Stabilized Seed Laser for Space Applications, Phase II Project Image *(https://techport.nasa.gov/image/127621)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
ADVR, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Shirley Mcneil

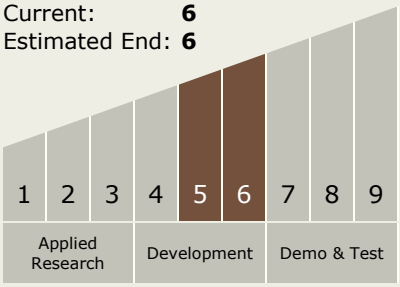
Co-Investigator:
Shirley Mcneil

Iodine Stabilized Seed Laser for Space Applications, Phase II

Completed Technology Project (2014 - 2016)

Technology Maturity (TRL)

Start: **5**
Current: **6**
Estimated End: **6**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System